

THE TRIBE STRONGYLOGASTERINI  
(HYMENOPTERA, TENTHREDINIDAE) FROM TAIWAN

TIKAHIKO NAITO

Entomological Laboratory, Faculty of Agriculture, Kobe University, Rokko, Kobe, 657  
Japan.

---

*Abstract.*—The tribe Strongylogasterini is represented by nine species belonging to three genera in Taiwan. Two new species, *Strongylogaster nantouensis* and *Pseudohemitaxonus taiwanus*, and the males of *Strongylogaster fulva* Naito and Huang and *S. formosana* (Rohwer) are described and illustrated. Three species, *Strongylogaster fulva* Naito and Huang, *Hemitaxonus nigroorolis* (Malaise) and *H. alboorolis* (Malaise) are newly recorded from Taiwan. Two genera, *Canonarea* Malaise and *Trearea* Malaise are new synonyms of the genus *Hemitaxonus*. The genus *Pseudohemitaxonus* is a new record in Taiwan. A key is given to separate the genera and species of the tribe from Taiwan.

*Key Words:* *Strongylogaster*, *Hemitaxonus*, *Pseudohemitaxonus*

---

Naito (1975) discussed the monophyly of five related genera, *Eriocampidea*, *Hemitaxonus*, *Pseudohemitaxonus*, *Nipponorhynchus* and *Adelesta*, in the subfamily Selandriinae. The Strongylogasterini, one of five tribes of the subfamily, consists of these five genera and their two related genera, *Strongylogaster* and *Canonias*. The morphological characters may be highly variable in this tribe (Smith 1969), but the members share the following characters: rather long and slender sawflies exclusively associated with ferns; antenna 9-segmented with flagellar segments gradually reduced in length towards apex; fore wing with vein Rs+M curved towards stigma and anal cell usually with suberect crossvein, if absent, prepectus represented by raised shoulder; hind wing with two closed middle cells; and tarsal claw slender, slightly bent at apex.

In Taiwan, this tribe was known by four species belonging to two genera (Takeuchi 1941): *Strongylogaster lineata* (Christ), *S. formosana* (Rohwer), *S. abdominalis* (Takeuchi) and *Hemitaxonus formosanus* Ta-

keuchi. The present study, based on specimens collected by some Japanese entomologists and specimens deposited in the Taiwan Agricultural Research Institute, revealed the occurrence of nine species in three genera, *Strongylogaster*, *Hemitaxonus*, and *Pseudohemitaxonus*. Of these, one species of *Strongylogaster* and one species of *Pseudohemitaxonus* are new to science, and another species of *Strongylogaster* and two species of *Hemitaxonus* are newly recorded from Taiwan. Two genera, *Canonarea* and *Trearea* described by Malaise (1947) based on species from Burma, are here regarded as synonyms of *Hemitaxonus*.

KEY TO GENERA AND SPECIES OF THE  
STRONGYLOGASTERINI KNOWN  
FROM TAIWAN

1. Posttergite about as wide as scutellum. Anal cell of hind wing sessile or with short petiole at most as long as greatest breadth of cell. Propodeum normal, not excised at center . . . . . 2
- Posttergite about 1.5 times as wide as scutellum. Anal cell of hind wing with long petiole about 1.5 × greatest breadth of cell. Propo-

- deum deeply and broadly excised at center ...  
 ... (*Pseudohemitaxonus* Conde) *P. taiwanus* n. sp.
- 2. Prepectus represented by raised shoulder, separated from mesepisternum by furrow. Anal cell of fore wing without crossvein (if present, sawsheath bifid at apex in dorsal view) ...  
 ... (*Strongylogaster* Dahlbom) 3
- Prepectus flat, represented by distinct sclerite, separated from mesepisternum by suture. Anal cell of fore wing with suberect crossvein ...  
 ... (*Hemitaxonus* Ashmead) 7
- 3. Head with large separate punctures. Frontal area in form of raised platform, not surrounded by distinct raised carina. Tarsal claw with large inner tooth about 1/2 x outer one. Sawsheath with large leaflike scopa ... 4
- Head without large punctures. Frontal area surrounded by sharp raised carina. Tarsal claw simple or with very small inner tooth. Sawsheath with small apical projection or simple, not divided at apex in dorsal view (Fig. 4) ... 5
- 4. Propodeum reticulate and dull. Clypeus narrowly emarginate in front to depth of about 1/3 its medial length. Head and thorax black in female. Second tergite rufous (sometimes with black mark) in male ...  
 ... *Strongylogaster lineata* Christ
- Propodeum smooth and polished. Clypeus broadly emarginate in front to depth of about 1/4 its medial length. Head and thorax brownish in female. Second tergite black with apical margin rufous in male ...  
 ... *Strongylogaster fulva* Naito and Huang
- 5. Anal cell of hind wing with petiole. Tarsal claw simple, without inner tooth. Sawsheath divided at apex, with small apical projection. Hind femur entirely yellowish ... 6
- Anal cell of hind wing sessile. Tarsal claw with small inner tooth. Sawsheath simple, not divided at apex in dorsal view (Fig. 4). Basal half of hind femur black ...  
 ... *Strongylogaster nantouensis* n. sp.
- 6. Clypeus white. Abdomen black to dark brown ...  
 ... *Strongylogaster formosana* (Rohwer)
- Clypeus black to dark brown. Abdomen with 2nd to 6th terga rufous ...  
 ... *Strongylogaster abdominalis* (Takeuchi)
- 7. Anepimeron without membranous area. Anal cell of hind wing sessile. Tarsal claw with small inner tooth. Abdomen black with 3rd to 5th or 6th terga rufous ... 8
- Anepimeron with large membranous area. Anal cell of hind wing with petiole. Tarsal claw simple, without inner tooth. Abdominal terga usually entirely rufous ...  
 ... *Hemitaxonus formosanus* Takeuchi
- 8. Clypeus white. Hind femur yellow. Malar space

- about as long as diameter of front ocellus ...  
 ... *Hemitaxonus albooralis* (Malaise)
- Clypeus black. Hind femur blackish with apical half yellow. Malar space about a half of diameter of front ocellus ...  
 ... *Hemitaxonus nigrooralis* (Malaise)

**Genus *Strongylogaster* Dahlbom**

This genus is represented by 39 species mainly in the temperate zone of the northern hemisphere: 11 species in North America, 8 species in Europe and 26 species in eastern Asia (Naito and Huang 1988). The following five species occur in Taiwan, including a new species and a newly recorded species.

***Strongylogaster lineata* (Christ)**

*Strongylogaster lineata*: Enslin, 1914, p. 205; Takeuchi, 1941, p. 243; Zhelochovtsev, 1951, p. 152; Benson, 1968, p. 134; Naito, 1980, p. 400.

Specimens examined.—2 ♀ 2 ♂, Tungpu, Nantou Hsien, 10.iv.1965, T. Saigusa; 1 ♂, Meifeng, Nantou Hsien, 21.iv.1978, T. Niisato; 2 ♂, Pilushenmu (2200 m), Hualien Hsien, 29.iii.1981, T. Shimomura; 1 ♀, Howangshan, 7.iv.1973, C. C. Lo; 1 ♀, Alishan, Chiayi Hsien, 8.iv.1965, T. Shirozu; 1 ♂, Alishan, 9.iv.1965, Y. Hirashima.

Distribution.—Taiwan, Japan, Korea, Kuriles, Siberia, Caucasus, Turkey, Iran, Europe.

Remarks.—The coloration of the abdomen is significantly variable in both sexes of this widespread species, but it is rather uniform in each sex of specimens from Taiwan. The male abdomen is rufous except for the black basal two segments, and the female abdomen is black with a narrow yellow band on the apical margins of the 2nd to 8th terga.

***Strongylogaster fulva* Naito and Huang (Fig. 1)**

*Strongylogaster fulva*: Naito and Huang, 1988, p. 41.

Male.—Length, 8.5–9.5 mm. Similar to

female in morphological structure but quite different in coloration: Head and thorax black with labrum, labial and maxillary palpi and tegula yellowish. Legs light brown; coxae black except for extreme apices; trochanters partly brown. Abdomen rufous; propodeum and basal part of 2nd tergite black; 2nd to 5th terga with black mark on lateral sides. Penis valve as in Fig. 1.

Specimens examined.—1 ♂, Kuantaoshan, Miaoli Hsien, 9.iv.1984, C. C. Lo; 1 ♂, Kuantaoshan, 9.v.1984, C. C. Lo; 4 ♂, Howangshan, 7.iv.1984, C. C. Lo; 1 ♀, Sungkang, Nantou Hsien, 4.v.1984, C. C. Lo.

Distribution.—Taiwan, South China.

Remarks.—This species is newly recorded from Taiwan. It was described from females from Tibet and Sichuan, China, by Naito and Huang (1988). The male, which was unknown, is similar to the male of *S. lineata* but is distinguished from the latter by the broadly emarginate clypeus, the shining thorax and propodeum, and the partly rufous 2nd tergite. A female specimen from Taiwan is paler than those from Tibet or Sichuan. The Taiwanese specimen is light brown except for the black 5th to 9th antennal segments and the large black mark on the mesonotal lobe, while the Chinese specimens are dark brown to black with various amounts of orange.

***Strongylogaster nantouensis***

NEW SPECIES

(Figs. 2, 4, 5)

Female.—Length 9.0 mm. Black; apical margin of labrum, maxillary and labial palpi, tegula and apical margin of abdominal segments yellowish. Legs black to dark brown; apices of fore and mid coxae, apical half of hind coxa, trochanters, apices of fore and mid femora, apical third of hind femur, basal third of fore and mid tibiae and basal  $\frac{2}{3}$  of hind tibia yellowish. Wings hyaline with apical margins somewhat dark.

Head shining, with close, minute punctures; frontal area with many longitudinal wrinkles; postocellar area smooth. Labrum

flat, gently rounded in front. Clypeus nearly flat, shallowly emarginate in front to depth of about  $\frac{1}{6}$  its medial length. Median fovea represented by small, elongated pit. Lateral fovea open below, with indistinct crest above. Frontal area concave, surrounded by narrow raised carina laterally and by broad, dull carina anteriorly. Interocellar furrow opening out towards front ocellus. Postocellar furrow represented by deep line. Vertical furrow deep, convergent toward front ocellus. Postocellar area convex; breadth : length = 23:13. Vertex with indistinct convex area at outside of lateral ocellus. Post genal carina developed on lower hind margin. Malar space narrow, about  $\frac{1}{3} \times$  diameter of front ocellus. Antenna about  $2.2 \times$  breadth of head; relative lengths of segments about 8:5:24:23:23:18:17:16:14. Thorax smooth and shining; prescutum with minute and close punctures; lateral and posterior margins of scutellum with several large and separate punctures; prepectus represented by narrow, raised shoulder. Anal cell of fore wing without crossvein. Anal cell of hind wing sessile. Tarsal claw with very small inner tooth. Abdomen (including propodeum) with fine microsculpture. Sawsheath short, not divided at apex in dorsal view, truncate at apex in lateral view (Fig. 4). Saw as in Fig. 5.

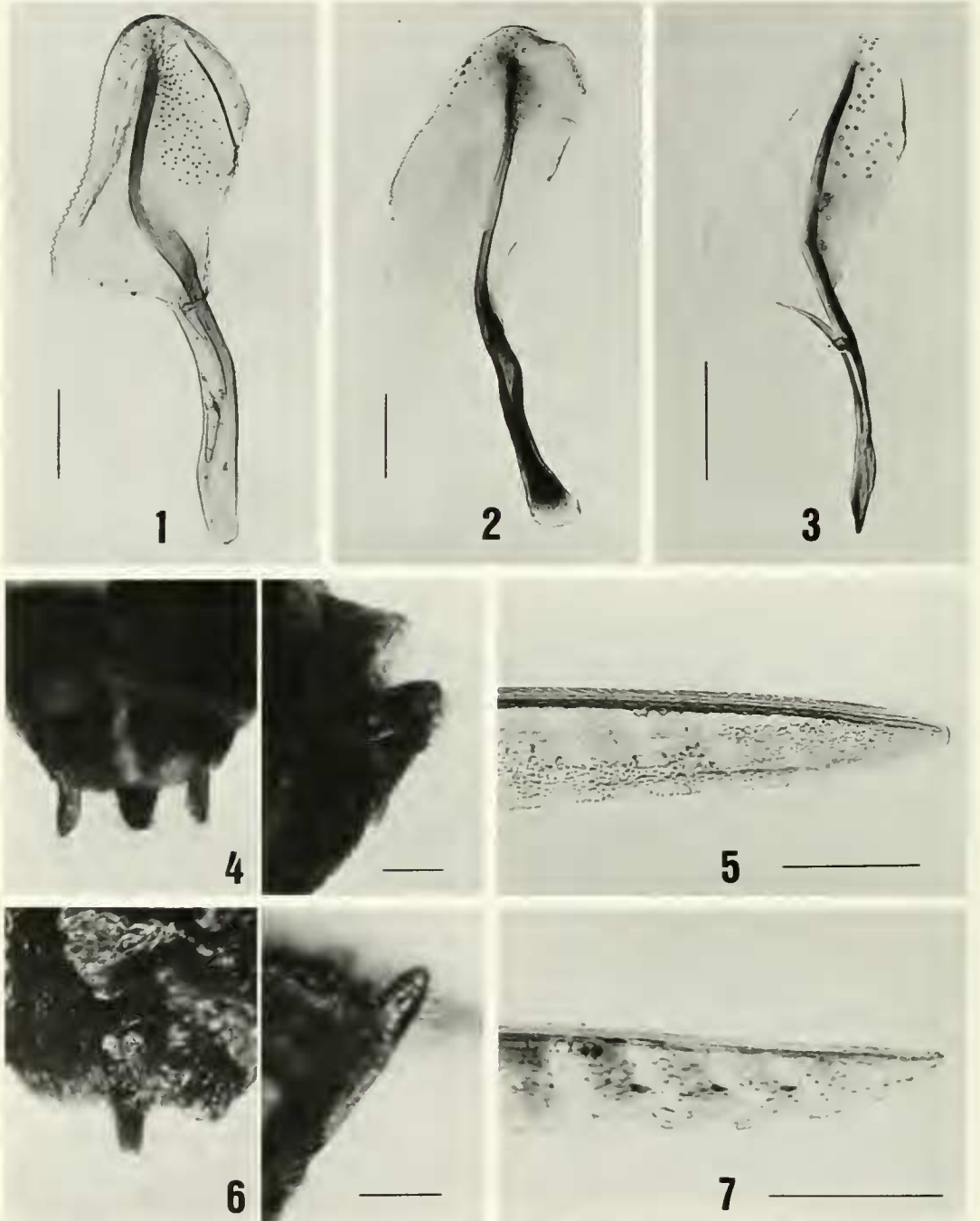
Male. Length, 7.5–8.0 mm. Similar to female except pronotum with upper angle yellow and vertical furrows subparallel with each other. Penis valve as in Fig. 2.

Holotype.—Female, Nanshanchi, Nantou Hsien, 21.iii.1979, A. Shinohara (Deposited in the Entomological Laboratory of Kobe University).

Paratypes.—1 ♂, same locality and date to the holotype; 1 ♂, Nanshanchi, 23.iii.1977, T. Naito; 1 ♂, Meifeng, Nantou Hsien, 8–11.v.1984, K. C. Chou and C. C. Pan; 1 ♂, "Hokuko, Kaminoshimaonsen," Miaoli Hsien, 11.iv.1967, T. Shirozu.

Distribution.—Taiwan.

Remarks.—This new species is similar to *S. soriculatipes* Cresson from North Amer-



Figs. 1-7. Fig. 1, *Strongylogaster fulva*, penis valve. Figs. 2, 4, 5, *Strongylogaster nantouensis*. 2, Penis valve. 4, Sawsheath in dorsal view (left) and in lateral view (right). 5, Saw. Fig. 3, *Strongylogaster formosana*, penis valve. Figs. 6, 7, *Pseudohemitaxonus taiwanus*. 6, Sawsheath in dorsal view (left) and in lateral view (right). 7, Saw. Scale: 0.2 mm in Figs. 1-4, 6; 0.1 mm in Figs. 5, 7.

ica, but the latter species differs from *S. nantouensis* by the yellowish clypeus, yellowish hind femur, dull frontal carina, and broad sawsheath in lateral view.

***Strongylogaster formosana* (Rohwer)**  
(Fig. 3)

*Thrinax formosana* Rohwer, 1916, p. 100;  
Takeuchi, 1941, p. 235.

Male.—Length, 6.5 mm. Similar to female except for entirely black abdomen and anal cell of hind wing with petiole a little longer than breadth of the cell. Penis valve as in Fig. 3.

Specimens examined.—1 ♂, Shitonshan, Miaoli Hsien, 15.iii.1980, T. Tanabe; 1 ♂, Meifeng, Nantou Hsien, 28.v.1975, S. Imasaka; 1 ♂, Tsuifeng (2300 m), Nantou Hsien, 23.iii.1979, A. Shinohara; 1 ♀, Alishan, Chiayi Hsien, 9.v.1922, S. Mori.

Distribution.—Taiwan.

Remarks.—Only two females had been recorded from Taiwan. The male was previously unknown.

***Strongylogaster abdominalis* (Takeuchi)**

*Thrinax abdominalis* Takeuchi, 1928, p. 42;  
Takeuchi, 1941, p. 235.

Specimens examined.—1 ♀ 2 ♂, Piananambu-Shikikun, Taipei Hsien, 20.vii.1932, T. Esaki; 1 ♂, Tapingshan, Taipei Hsien, 22.vii.1932, T. Esaki; 1 ♂, Sungkan, Nantou Hsien, 16.iii.1977, A. Shinohara; 1 ♀, Tsuifeng, Nantou Shien, 17.iii.1977, A. Shinohara; 1 ♀ 1 ♂, Alishan (2300 m), Chiayi Hsien, 9.iv.1965, T. Saigusa; 3 ♂, Alishan (2400 m), 5–9.viii.1981, L. Y. Chou and S. C. Lin; 1 ♂, Alishan, 17–20.viii.1982, K. C. Chou and C. C. Pan.

Distribution.—Taiwan.

**Genus *Hemitaxonus* Ashmead**

*Trearea* Malaise, 1947, p. 35. New synonym. Type species: *Trearea compressicornis* Malaise. Monotypic.

*Canonarea* Malaise, 1947, p. 38. New synonym. Type species: *Canonarea albooralis* Malaise. Original designation.

Malaise (1947) described *Trearea* and *Canonarea* as new genera of the Selandriinae and commented that these two genera together with another related genus, *Canonias* Konow, compose a distinct and isolated group in the subfamily. No comments were given on the relationships to other groups. *Canonarea*, however, is quite identical to *Hemitaxonus*. Characters separating *Trearea* from *Canonarea* are the absence of the 1st cubital crossvein in the fore wing and the compressed antenna, but these are considered to be variations within *Hemitaxonus*. The first two genera, therefore, should be included in *Hemitaxonus* as new synonyms.

This genus was represented by 16 species. Four species were recorded from North America (Smith 1969) and 12 species from East Asia, of which only one spreads to Europe (Naito 1971). Three species described by Malaise (1947) as new species of *Canonarea* or *Trearea* are newly included in this genus. Other than the species below, *Hemitaxonus compressicornis* (Malaise), described in *Trearea*, is a new combination. The following three species occur in Taiwan, the last two representing the first records of these species there.

***Hemitaxonus formosanus* Takeuchi**

*Hemitaxonus formosanus* Takeuchi, 1928, p. 43; Takeuchi, 1941, p. 247.

Specimens examined.—1 ♀, Tapingshan, Taipei Hsien, 24.vii.1932, T. Esaki; 1 ♀, Pahsienshan, Taichung Hsien, 30.viii.1929, K. Takeuchi; 1 ♀ 5 ♂, Sungkang, Nantou Hsien, 18.vii.1972, T. Naito; 1 ♂, Tsuifeng, Nantou Hsien, 18.iii.1977, A. Shinohara; 1 ♂, Tsuifeng (2300 m), 23.iii.1979, A. Shinohara.

Distribution.—Taiwan.

***Hemitaxonus albooralis* (Malaise),  
NEW COMBINATION**

*Canonarea albooralis* Malaise, 1947, p. 38.

Specimens examined.—1 ♀, Meifeng-

Sungkang, Nantou Hsien, 4.v.1978, A. Shinohara; 2 ♀, Meifeng (2150 m), 8–11.v.1984, K. C. Chou and C. C. Pan.

Distribution.—Taiwan, Burma.

Remarks.—Three females from Taiwan are identical with the paratype from Burma in structure and coloration. This is the first record of this species from Taiwan and also outside the type locality, Burma.

*Hemitaxonus nigrooralis* (Malaise),  
NEW COMBINATION

*Canonarea nigrooralis* Malaise, 1947, p. 39.

Specimens examined.—1 ♀, Lushan (1000 m), Nantou Hsien, 27–31.v.1980, K. S. Lin and L. Y. Chou; 1 ♀, Wusho (1159 m), Nantou Hsien, 6–11.v.1981, K. S. Lin and S. C. Lin; 2 ♀, Tunpu (1200 m), Nantou Hsien, 23–27.vii.1984, K. C. Chou and C. H. Yang; 1 ♀, Lienhwachi, Nantou Hsien, 26.iii.1984, C. C. Lo.

Distribution.—Taiwan, Burma, Himalaya.

Remarks.—This is the first record of this species from Taiwan. I also examined a female specimen from Hymalaya labeled "Panjab, Himalaya, Khajjiar, 23.vi.1965, Tikav leg." These are the first occurrences outside the type locality, Burma.

Genus *Pseudohemitaxonus* Conde

Three species have been described, one from Europe and two from Japan (Naito 1969). The following species represents the first record of this genus from Taiwan.

*Pseudohemitaxonus taiwanus*

NEW SPECIES

(Figs. 6, 7)

Female.—Length, 5.3 mm. Head and thorax black; clypeus, labrum, labial and maxillary palpi, scape, pedicel (with dark band on anterior half), pronotum, tegula and legs (except for hind tarsus infuscate) yellowish. Abdomen dark brown; 2nd to 4th terga pale brown and with yellowish longitudinal line in middle; 2nd to 6th terga

with apical margins narrowly and lateral margins broadly yellowish.

Head shining, feebly shagreened, with small punctures and sparse pubescence. Labrum nearly flat, rounded in front. Clypeus gently convex, shallowly emarginate in front to depth of about  $\frac{1}{2}$  its medial length. Median fovea indistinct and lateral fovea punctiform. Frontal area represented by feebly raised platform, not clearly defined. Interocellar and postocellar furrows absent. Vertical furrow represented by shallow line, somewhat convergent toward apex. Postocellar area nearly flat; breadth: length = 15:7. Malar space about  $\frac{2}{5}$  × diameter of front ocellus. Postgenal carina developed on lateral side. Antenna filiform, about 2.1 × breadth of head; relative lengths of segments about 6:5:24:24:20:15:15:12:14. Thorax shining and smooth; mesonotal middle lobe and lateral lobes with small and close punctures; pronotum, scutellum and mesepisternum with sparse and fine punctures. Posttergite large, about 1.5 times as wide as scutellum. Prepectus defined by distinct suture. Anal cell of fore wing with subcrect crossvein; 1st cubital crossvein absent; vein Rs+M strongly curved toward stigma. Anal cell of hind wing with petiole about 1.5 × greatest breadth of cell. Inner front tibial spur slender, slightly bifid at apex. Tarsal claw with very small inner tooth. Abdomen feebly reticulate throughout. Propodeum deeply and broadly excised. Saw-sheath slender, not bifid at apex (Fig. 6). Saw as in Fig. 7.

Male.—unknown.

Holotype.—Female, Meifeng, 2150 m, Nantou Hsien, 19–21.iv.1983, K. C. Chou and S. P. Huang (Deposited in the Taiwan Agricultural Research Institute).

Distribution.—Taiwan.

Remarks.—This new species resembles *P. dryopteridis* Naito from Japan but is easily distinguished from the latter by the frontal area which is not surrounded by a carina, the clearly defined prepectus, and the very

small but distinct inner tooth on the tarsal claw.

#### ACKNOWLEDGMENTS

I express my sincere thanks to Dr. D. R. Smith, Systematic Entomology Laboratory, U.S.D.A., Washington, D.C., for critical reading of the manuscript. I also express appreciation to the following people who have allowed study of valuable specimens in their private or institute collections: Dr. L. Y. Chou, Taiwan Agricultural Research Institute; Dr. A. Shinohara, Department of Zoology, National Science Museum, Tokyo; Mr. H. Kumamoto, Hirakata City, Osaka; and Prof. T. Saigusa, Kyushu University, Fukuoka.

#### LITERATURE CITED

- Benson, R. B. 1968. Hymenoptera from Turkey. Symphyta. Brit. Mus. (Nat. Hist.) Ent. Bull. 22: 109–207.
- Enslin, E. 1913–1914. Die Tenthredinoidea Mitteleuropas. Beit. Deut. Ent. Zeit., Beihefte, pp. 99–309.
- Malaise, R. 1947. The Tenthredinoidea of south-eastern Asia. The *Emphytus-Athlophorus* group. Ark. Zool. 39A: 1–39.
- Naito, T. 1969. The genus *Pseudohemitaxonus* of Japan, with descriptions of two new species. Kontyu, Tokyo 37: 403–408.
- . 1971. A revision of the genus *Hemitaxonus* in the old world, I (Hymenoptera, Tenthredinidae). Kontyû, Tokyo 39: 19–28.
- . 1975. Phylogeny and distribution of five related genera, *Eriocampidea*, *Hemitaxonus*, *Pseudohemitaxonus*, *Nipponorhynchus* and *Adelesta*, referred to the Selandriinae (Hymenoptera, Tenthredinidae). Kontyû, Tokyo 43: 330–342.
- . 1980. Studies on the Japanese Sawflies of the Genus *Strongylogaster* Dahlbom (Hymenoptera, Tenthredinidae). Kontyû, Tokyo 48: 390–401.
- Naito, T. and F. S. Huang. 1988. The sawfly genus *Strongylogaster* in Tibet and Sichuan, China (Hymenoptera, Tenthredinidae). Sci. Rept. Fac. Agr. Kobe Univ. 18: 41–48.
- Rohwer, S. A. 1916. H. Sauter's Formosa-Ausbeute. Chalastogastra (Hymenoptera). Suppl. Ent. 5: 81–113.
- Smith, D. R. 1969. Nearctic sawflies II. Selandriinae: Adults. U.S. Dep. Agr. Tech. Bull., 1938, 48 pp.
- Takeuchi, K. 1928. New sawflies from Formosa—II. Formosa Nat. Hist. Soc. Trans. 18: 38–45.
- . 1941. A systematic study of the suborder Symphyta (Hymenoptera) of the Japanese empire (IV). Tenthredo 3: 230–274.
- Zhelochovtsev, A. N. 1951. [Survey of the Palaearctic sawflies of the subfamily Selandriinae (Hym., Tenthred.).]. Moscow Gosud. Univ. Zool. Muz. Sborn. Trudy 7: 123–152. [In Russian.]